

Claims:

Claims 1-27 Cancelled

28. (Previously Presented): An isolated polypeptide comprising a member selected from the group consisting of

- (a) an amino acid sequence matching SEQ ID NO:2 and
- (b) an immunogenic polypeptide comprising a fragment sequence of at least 15 amino acids that matches an aligned contiguous segment of SEQ ID NO:2,

wherein the isolated polypeptide, when administered to a subject in a suitable composition which can include an adjuvant, or a suitable carrier coupled to the polypeptide, induces an antibody or T-cell immune response to a polypeptide having the sequence of SEQ ID NO:2.

29. (Previously Presented): An isolated polynucleotide encoding a polypeptide of Claim 28 or the full complement to the isolated polynucleotide.

30. (Previously Presented): The isolated polypeptide of Claim 28, wherein the polypeptide is according to (a).

31. (Previously Presented): An isolated polynucleotide encoding a polypeptide of Claim 30 or the full complement to the isolated polynucleotide.

32. (Previously Presented): A process for expressing the polynucleotide of Claim 31 comprising transforming a host cell with an expression vector comprising the polynucleotide and culturing the host cell under conditions sufficient for expression of the polynucleotide.

33. (Previously Presented): The isolated polypeptide of Claim 28, wherein the polypeptide is according to (b).

34. (Previously Presented): An isolated polynucleotide encoding a polypeptide of Claim 33 or the full complement to the isolated polynucleotide.

35. (Previously Presented): The isolated polypeptide of Claim 28, wherein the immunogenic fragment of (b) comprises at least 20 amino acids.

36. (Previously Presented): The isolated polypeptide of Claim 28, wherein the isolated polypeptide consists of SEQ ID NO:2.

37. (Previously Presented): An isolated polynucleotide encoding the polypeptide of Claim 36 or the full complement to the isolated polynucleotide.

38. (Previously Presented): A process for expressing the polynucleotide of Claim 37 comprising transforming a host cell with an expression vector comprising the polynucleotide and culturing the host cell under conditions sufficient for expression of the polynucleotide.

39. (Previously Presented): A fusion protein comprising the isolated polypeptide of Claim 22.

40. (Previously Presented): An isolated polynucleotide comprising the polynucleotide of SEQ ID NO:1.

41. (Previously Presented): An isolated polynucleotide segment comprising a polynucleotide sequence or the full complement of the entire length of the polynucleotide sequence, wherein the polynucleotide sequence hybridizes to the full complement of SEQ ID NO:1 minus the complement of any stop codon, wherein the hybridization conditions include incubation at 42°C in a solution comprising: 50% formamide, 5x SSC (150mM NaCl, 15mM trisodium citrate), 50mM sodium phosphate (pH 7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 micrograms/ml denatured, sheared salmon sperm DNA, followed by washing in 0.1x SSC at 65°C; and, wherein the polynucleotide sequence is identical to SEQ ID NO:1 minus any terminal stop codon, except that, over the entire length corresponding to SEQ ID NO:1 minus any terminal stop codon,  $n_n$  nucleotides are substituted, inserted or deleted, wherein  $n_n$  satisfies the following expression

$$n_n \leq n - (x_n \cdot y)$$

wherein  $x_n$  is the total number of nucleotides in SEQ ID NO :1 minus any terminal stop codon,  $y$  is at least 0.95, and wherein any non-integer product of  $x_n$  and  $y$  is rounded down to the nearest integer before subtracting the product from  $x_n$ ; and wherein the polynucleotide sequence detects *Moraxella catarrhalis*.

42. (Previously Presented): An expression vector comprising the isolated polynucleotide of Claim 29.

43. (Previously Presented): A host cell transformed with the expression vector of Claim 42.

44. (Previously Presented): A vaccine comprising the polypeptide of Claim 28 and a pharmaceutically acceptable carrier.

45. (Previously Presented): The vaccine of Claim 44, wherein the vaccine comprises at least one other *Moraxella catarrhalis* antigen.

46. (Previously Presented): An antibody immunospecific for the polypeptide or immunogenic fragment of Claim 28.

47. (Previously Presented): A method for inducing an immune response in a mammal comprising administration of the polypeptide of Claim 28.

48. (Previously Presented): A method of diagnosing a *Moraxella catarrhalis* infection, comprising identifying a polypeptide of Claim 28, or an antibody that is immunospecific for the polypeptide, present within a biological sample from an animal suspected of having such an infection.

49. (Previously Presented): A method for inducing an immune response in a mammal comprising administration of the isolated polynucleotide of Claim 29.

50. (Previously Presented): A therapeutic composition useful in treating humans with *Moraxella catarrhalis* comprising at least one antibody directed against the polypeptide of Claim 28 and a suitable pharmaceutical carrier.